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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,991	03/22/2004	Syungaku Nakamura	OPS C-499A	1474
23474	7590	08/19/2005	EXAMINER	
FLYNN THIEL BOUTELL & TANIS, P.C. 2026 RAMBLING ROAD KALAMAZOO, MI 49008-1631			SHEWAREGED, BETELHEM	
			ART UNIT	PAPER NUMBER
			1774	

DATE MAILED: 08/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/805,991

Applicant(s)

NAKAMURA ET AL.

Examiner

Betelhem Shewareged

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 May 2005 and 06 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2,3 and 5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2,3 and 5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. Applicant's responses filed on 05/09/2005 and 06/06/2005 have been considered. The double patenting and the 35 USC 102 rejections have been withdrawn in view of Applicant's amendment.
2. Claims 1 and 4 are canceled, and claims 2, 3 and 5 are pending.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2, 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichinose et al. (US 6,550,909 B2) in view of Kitchin et al. (US 5,342,688) and Mukoyoshi et al. (US 6,242,082 B1).

Ichinose discloses a recording medium comprising a substrate and a porous layer (abstract). The substrate can be a cloth (col. 9, line 40). The porous layer comprises a coating formulation containing resin particles such as polyethylene (col. 7, line 21) with a minimum film forming temperature of 40-150 degree C (col. 7, line 56). The coating formulation has a pH value of 3-7 (col. 12, line 43). The coating formulation is coated on the substrate (col. 12, line 57), followed by drying treatment (col. 13, line 19). Ink jet printer is used to print on the porous layer (col. 16, line 16). After printing,

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the printed recording medium is subjected to heat treatment (col. 16, line 42). Ichinose does not teach the use of a porous layer having a mordant.

Kitchin teaches an ink receptive sheet comprising a substrate and an ink receptive layer having a polymer, a mordant and polymeric beads (abstract and col. 19, line 37). Kitchin does not teach the use of mordant as recited in claim 5. Mukoyoshi teaches a recording sheet having ink receiving layer comprising a cationic resin under a trademark NEOFIX E-117, made by Nikka Chemical CO., LTD. (col. 12, line 10). NEOFIX E-117 is the same type of cationic resin used to make the claimed invention, and has an electrical conductivity of 2.2 mS/cm and a molecular weight of 2,500 (see Examples 1, 3 and 4 of current application). Kitchin and Mukoyoshi are analogous arts because they are from the same field of endeavor that is the ink jet recording medium art. At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine the cationic resin of Mukoyoshi with the ink receptive layer of Kitchin in order to fix a dye component contained in the ink and to enhance the color density and the water resistance of the printed ink images (see col. 7, lines 33-37 of Mukoyoshi).

Ichinose and the combination of Kitchin and Mukoyoshi are analogous arts because they are from the same field of endeavor that is the ink jet recording medium art. At the time of the invention, it would be obvious to a person of ordinary skill in the art to combine the ink receptive layer of the combination of Kitchin and Mukoyoshi with the invention of Ichinose in order to improve the properties of the layer such as ink bleeding and shelf life (col. 3, line 21 of Kitchin).


***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betelhem Shewareged whose telephone number is 571-272-1529. The examiner can normally be reached on Mon.-Fri. 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

B.S.  
August 13, 2005.

  
**BETELHEM SHEWAREGED  
PRIMARY EXAMINER**